Project Introduction

Cog-Gauge is a portable hand-held game that can be used by astronauts and crew members during space exploration missions to assess their cognitive workload decrements that possibly result from fatigue, stress, or neurocognitive deficits. Cog-Gauge combines behavioral workload assessment using a dual-task approach with predictive workload models to counter the effects of game learning. The game will be built using an iterative usability driven approach where emphasis will be placed on building an engaging relevant game that builds from contextual task analysis and user profiling. The specific technical challenges foreseen are integrating two approaches of cognitive workload modeling, and using learning curves to model game learning, then using algorithms to determine a user's workload as soon as they complete a timed interaction with the game. Specific questions to address pertain to feasibility of proposed solution and hardware/software requirements.

Primary U.S. Work Locations and Key Partners
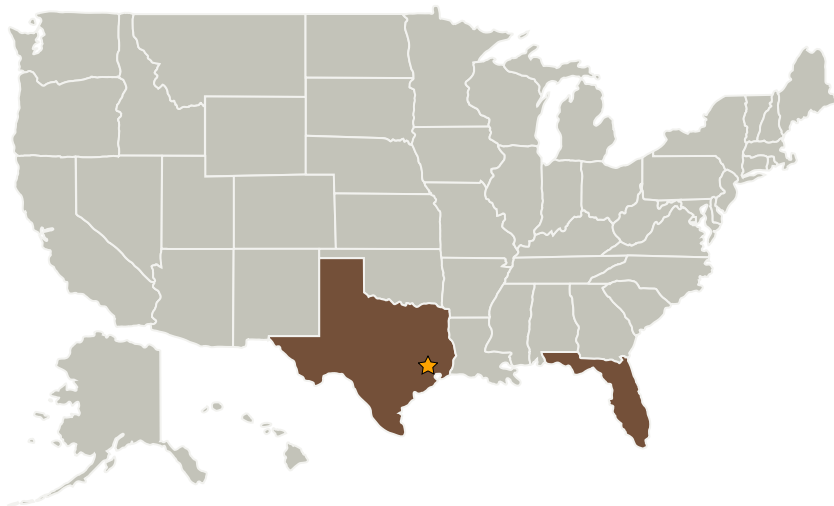
CogGauge, Phase I

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Johnson Space Center (JSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Organizations Performing Work	Role	Type	Location
⭐Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
Design Interactive, Inc.	Supporting Organization	Industry Women-Owned Small Business (WOSB)	Oviedo, Florida

Primary U.S. Work Locations	
Florida	Texas

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  └ TX11.2 Modeling
    └ TX11.2.3 Human-System Performance Modeling

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